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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/464,997	12/16/1999	LOU W. WATKINS	4642	8340

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EXAMINER

BAREFORD, KATHERINE A

ART UNIT PAPER NUMBER

1762

DATE MAILED: 10/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/464,997

Applicant(s)

WATKINS, LOU W.

Examiner

Katherine A. Bareford

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,8-10,12 and 19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers *(claims 2, 3, 6, 7, 11, and 13-18 are canceled)*

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The RCE request and amendment of Sept. 29, 2003 have been received and entered. The Examiner notes that the filed amendment of Sept. 23, 2003 contains a listing of the filed claims and their status. The amendment indicates that claims 1, 4-5, 8-12 and 19-20 are pending and that claims 2-3, 6-7 and 13-18 are canceled. This is incorrect. **Claim 11, listed on the amendment as an "original" claim, was previously canceled by applicant in an amendment filed Jan. 23, 2002. Therefore, for the purpose of examination, the Examiner has treated claim 11 as being canceled.** In the next response, applicant should indicate that claim 11 is canceled.

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Sept. 29, 2003 has been entered.

### *Claim Rejections - 35 USC § 112*

2. The rejection of claim 18 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession

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of the claimed invention is withdrawn due to applicant's cancellation of claim 18 in the amendment of Sept. 29, 2003.

3. The rejection of claim 5 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn due to applicant's amendment to make claim 5 depend from claim 1 in the amendment of Sept. 29, 2003.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4, 9-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 87/04768 (hereinafter '768) in view of Japan62-28222 (hereinafter '222) and Duthweiler (US 4676695).

'768 teaches a method of applying foam insulation to a length of pipe. Page 3, last paragraph through page 4, first paragraph. The pipe can be steel pipe. Page 6, 3<sup>rd</sup> paragraph. The pipe can be configured for use as a component in a sub-sea pipeline. Page 1, 1<sup>st</sup> paragraph. An inner foam insulator layer can be extruded around the length of steel pipe. Page 3, last paragraph through page 4, first paragraph. The foam layer can contain microspheres of plastic or

glass. Page 5, 1<sup>st</sup> paragraph. An outer protective thermoplastic cover layer is extruded around the foam layer. Page 3, last paragraph through page 4, first paragraph and page 6, 3<sup>rd</sup> paragraph (note thermoplastic layer 4 is top thermoplastic layer). The extruded layers are solidified in a desired shape around the length of steel pipe. Page 6, 2<sup>nd</sup> paragraph.

Claim 4, 10: the solidifying comprises bringing the thermoplastic protective layer in contact with water to cool the layer. Page 6, 2<sup>nd</sup> paragraph.

Claim 9: '768 teaches a method of applying foam insulation to a length of pipe. Page 3, last paragraph through page 4, first paragraph. The pipe can be steel pipe. Page 6, 3<sup>rd</sup> paragraph. The pipe can be configured for use as a component in a sub-sea pipeline. Page 1, 1<sup>st</sup> paragraph. An inner foam insulator layer can be extruded around the length of steel pipe. Page 3, last paragraph through page 4, first paragraph. The foam layer can contain microspheres of plastic or glass. Page 5, 1<sup>st</sup> paragraph. An outer protective thermoplastic cover layer is extruded around the foam layer. Page 3, last paragraph through page 4, first paragraph and page 6, 3<sup>rd</sup> paragraph (note thermoplastic layer 4 is top thermoplastic layer). The extruded layers are solidified in a desired shape around the length of steel pipe. Page 6, 2<sup>nd</sup> paragraph.

Claim 19 : '768 provides that the layers can be reheated, since heating occurs during extrusion (see page 6, 1<sup>st</sup> paragraph) followed by cooling (see page 6, 1<sup>st</sup> paragraph) and multiple extrusion passes can be provided. Page 6, 1<sup>st</sup> paragraph.

'768 teaches all the features of these claims except (1) that the foam insulation is syntactic and (2) the co-extrusion application of an inner foam layer and outer thermoplastic layer.

However, '222 teaches a method of applying a foam insulation to a length of pipe. See the abstract. An inner foam insulating and an outer protective cover are co-extruded around a simultaneously extruded length of pipe. Abstract and figures 1-3. The layers retain a desired shape about the length of pipe. Abstract and figures 1-3. The cover layer is a thermoplastic. Abstract.

Furthermore, Duthweiler teaches that when forming pipeline for undersea use, it is known to provide a steel pipe surrounded by an inner layer of plastic insulating foam and an outer layer of a waterproof coating such as polyethylene (which would be a thermoplastic). See column 8, lines 40-60. The inner layer of plastic insulating foam can desirably be a syntactic foam, containing hollow glass microspheres. See column 8, lines 50-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '768 to provide the foam inner layer and non-foam thermoplastic outer layer by co-extrusion as suggested by '222 with an expectation of desirable produced pipe, because '768 teaches forming, for example, around a pipe a three layer thermoplastic system with an inner layer, a foam intermediate layer and an outer layer by extrusion (see page 6, 3<sup>rd</sup> paragraph and figure 1B), and '222 teaches that when forming a three layer pipe with an inner layer, a foam intermediate insulation layer, and an outer layer using thermoplastics, it is conventionally known to use a co-extrusion process, which would save processing time and space. It would further have been obvious to provide that the foam material of '768 in view of '222 was syntactic, with hollow glass microspheres, as suggested by Duthweiler, in order to provide a desirable insulating material, because '768 provides using a foam material that can include glass microspheres, and Duthweiler

teaches that when using a foam material on a steel undersea pipeline, it is desirable to provide hollow glass microspheres for insulation purposes.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 87/04768 (hereinafter '768) in view of Japan62-28222 (hereinafter '222) and Duthweiler (US 4676695) as applied to claims 1, 4, 9-10 and 19 above, and further in view of Francis (US 4773448).

'768 in view of '222 and Duthweiler teach all the features of these claims except the water bath cooling.

However, Francis teaches a method of making a plastic pipe with a hard outer shell and an inner foam layer. Column 2, lines 5-45. Francis teaches cooling the pipe with a water bath to solidify the pipe after extrusion. Column 2, lines 25-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '768 in view of '222 and Duthweiler to use water bath cooling as suggested by Francis with an expectation of desirable quick cooling, because '768 in view of '222 and Duthweiler teaches forming a multilayer pipe by extrusion and cooling with water, and Francis teaches that when forming a multilayer pipe by extrusion, it is conventionally known to desirably use a water bath to cool the extruded material.

7. Claims 1, 8-9, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 380 163 A2 (hereinafter '163) in view of DE 2 803 708 (hereinafter '708) and Duthweiler (US 4676695).

'163 teaches a method of applying syntactic foam insulation to a length of pipe. Column 1, line 30 through column 4, line 10. An inner syntactic foam insulator and an outer protective cover are co-extruded around the length of pipe. Column 2, lines 2-20 and column 3, lines 5-45 and figures 3-4. The cover is rapidly solidified. Column 3, lines 35-45. This retains the foam in a desired shape about the length of pipe. Column 3, lines 35-45 and figures 3-4. The pipe can be steel. See column 5, lines 1-5. The pipe can be configured to be a component in a sub-sea pipeline. Column 1, lines 1-10.

Claim 9: '163 teaches a method of applying syntactic foam insulation to a length of pipe. Column 1, line 30 through column 4, line 10. An inner syntactic foam insulator and an outer protective cover are co-extruded around the length of pipe. Column 2, lines 2-20 and column 3, lines 5-45 and figures 3-4. The cover is rapidly solidified. Column 3, lines 35-45. This retains the foam in a desired shape about the length of pipe. Column 3, lines 35-45 and figures 3-4. The pipeline can be configured to be a component in a sub-sea pipeline. Column 1, lines 1-10.

Claim 19: the foam insulation provides a thermal insulation layer for the pipe even at elevated temperatures. See column 2, lines 45-55. As a result, the product pipe can be "re-heated" during use, providing a "re-heated insulating product" (since the claim provides no lower limit to the amount of heat that can be applied for "re-heating").

'163 teaches all the features of these claims except (1) the thermoplastic resin and (2) the air cooling (claims 8 and 12).

However, '708 teaches a method of applying a foam insulation to a length of pipe. See the abstract. An inner foam insulating and an outer protective cover are co-extruded around a



length of pipe. Abstract and figures 1-3. The layers retain a desired shape about the length of pipe. Abstract and figures 1-3. The cover layer is a thermoplastic. Abstract.

Furthermore, Duthweiler teaches that when forming pipeline for undersea use, it is known to provide a steel pipe surrounded by an inner layer of plastic insulating foam and an outer layer of a waterproof coating such as polyethylene (which would be a thermoplastic). See column 8, lines 40-60. The inner layer of plastic insulating foam can desirably be a syntactic foam, containing hollow glass microspheres. See column 8, lines 50-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '163 to use a thermoplastic cover layer as suggested by '708 and Duthweiler with an expectation of desirable produced pipe, because '163 teaches forming a three layer pipe with an inner layer, a foam intermediate layer and an outer layer by co-extrusion, and '708 teaches that when forming a three layer pipe with an inner layer, a foam intermediate insulation layer, and an outer layer using a co-extrusion process, it is conventionally known to use a thermoplastic outer layer and Duthweiler teaches that when providing a pipeline for undersea use with a three layer pipe including a syntactic foam intermediate layer and water proof coating outer layer, it is conventionally known to use a thermoplastic material for the outerlayer. It would further have been obvious to provide air cooling with an expectation of desirable solidification, because, at the least, if no other form of cooling was specifically used, the air contact after extrusion would allow the product to cool.

8. Claims 1, 4, 8-10, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 380 163 A2 (hereinafter '163) in view of Japan 62-28222 (hereinafter '222) and WO 87/04768 (hereinafter '768).

'163 teaches a method of applying syntactic foam insulation to a length of pipe. Column 1, line 30 through column 4, line 10. An inner syntactic foam insulator and an outer protective cover are co-extruded around the length of pipe. Column 2, lines 2-20 and column 3, lines 5-45 and figures 3-4. The cover is rapidly solidified. Column 3, lines 35-45. This retains the foam in a desired shape about the length of pipe. Column 3, lines 35-45 and figures 3-4. The pipe can be made from steel. Column 5, lines 1-10. The pipe can be configured to be a component in a sub-sea pipeline. Column 1, lines 1-10.

Claim 9: '163 teaches a method of applying syntactic foam insulation to a length of pipe. Column 1, line 30 through column 4, line 10. An inner syntactic foam insulator and an outer protective cover are co-extruded around the length of pipe. Column 2, lines 2-20 and column 3, lines 5-45 and figures 3-4. The cover is rapidly solidified. Column 3, lines 35-45. This retains the foam in a desired shape about the length of pipe. Column 3, lines 35-45 and figures 3-4. the pipe can be configured to be a component in a sub-sea pipeline.

~~Claim 18: the pipe of steel would be a rigid metallic pipe. See column 5, lines 1-10.~~

Claim 19: the foam insulation provides a thermal insulation layer for the pipe even at elevated temperatures. See column 2, lines 45-55. As a result, the product pipe can be "re-heated" during use, providing a "re-heated insulating product" (since the claim provides no lower limit to the amount of heat that can be applied for "re-heating").

'163 teaches all the features of these claims except (1) the thermoplastic resin, (2) the air cooling (claims 8 and 12) and (3) the water cooling (claims 4, 10).

However, '222 teaches a method of applying a foam insulation to a length of pipe. See the abstract. An inner foam insulating and an outer protective cover are co-extruded around a simultaneously extruded length of pipe. Abstract and figures 1-3. The layers retain a desired shape about the length of pipe. Abstract and figures 1-3. The cover layer is a thermoplastic. Abstract.

Furthermore, '768 teaches a method of applying foam insulation to a length of pipe. Page 3, last paragraph through page 4, first paragraph. The pipe can be steel pipe. Page 6, 3<sup>rd</sup> paragraph. The pipe can be configured for use as a component in a sub-sea pipeline. Page 1, 1<sup>st</sup> paragraph. An inner foam insulator layer can be extruded around the length of steel pipe. Page 3, last paragraph through page 4, first paragraph. The foam layer can contain microspheres of plastic or glass. Page 5, 1<sup>st</sup> paragraph. An outer protective thermoplastic cover layer is extruded around the foam layer. Page 3, last paragraph through page 4, first paragraph and page 6, 3<sup>rd</sup> paragraph (note thermoplastic layer 4 is top thermoplastic layer). The extruded layers are solidified in a desired shape around the length of steel pipe. Page 6, 2<sup>nd</sup> paragraph. The solidifying comprises bringing the thermoplastic protective layer in contact with water to cool the layer. Page 6, 2<sup>nd</sup> paragraph.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '163 to use a thermoplastic cover layer as suggested by '222 and '768 with an expectation of desirable produced pipe, because '163 teaches forming a three layer pipe with an

inner layer, a foam intermediate layer and an outer layer by extrusion, and '222 teaches that when forming a three layer pipe with an inner layer, a foam intermediate insulation layer, and an outer layer using a co-extrusion process, it is conventionally known to use a thermoplastic outer layer and '768 teaches that when forming, for example, around a sub-sea pipe a three layer system with an inner layer, a foam intermediate layer and an outer layer by extrusion (see page 6, 3<sup>rd</sup> paragraph and figure 1B), it is desirable for the outer layer to be thermoplastic. It would further have been obvious to provide air cooling with an expectation of desirable solidification, because, at the least, if no other form of cooling was specifically used, the air contact after extrusion would allow the product to cool. It would further have been obvious to modify '163 to provide water cooling with an expectation of desirable results, because '768 teaches the desirability of water cooling a thermoplastic extruded layer.

9. Claims 4-5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 380 163 A2 (hereinafter '163) in view of DE 2 803 708 (hereinafter '708) and Duthweiler (US 4676695) as applied to claims 1, 8-9, 12 and 19 above, and further in view of Francis (US 4773448).

'163 in view of '708 and Duthweiler teach all the features of these claims except the water bath cooling.

However, Francis teaches a method of making a plastic pipe with a hard outer shell and an inner foam layer. Column 2, lines 5-45. Francis teaches cooling the pipe with a water bath to solidify the pipe after extrusion. Column 2, lines 25-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '163 in view of '708 and Duthweiler to use water bath cooling as suggested by Francis with an expectation desirable quick cooling, because '163 in view of '708 and Duthweiler teaches forming a multilayer pipe by extrusion and cooling, and Francis teaches that when forming a multilayer pipe by extrusion, it is conventionally known to desirably use a water bath to cool the extruded material.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 380 163 A2 (hereinafter '163) in view of Japan 62-28222 (hereinafter '222) and WO 87/04768 (hereinafter '768) as applied to claims 1, 4, 8-10, 12 and 18-19 above, and further in view of Francis (US 4773448).

'163 in view of '222 and '768 teach all the features of this claim except the water bath cooling.

However, Francis teaches a method of making a plastic pipe with a hard outer shell and an inner foam layer. Column 2, lines 5-45. Francis teaches cooling the pipe with a water bath to solidify the pipe after extrusion. Column 2, lines 25-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '163 in view of '222 and '768 to use water bath cooling as suggested by Francis with an expectation desirable quick cooling, because '163 in view of '222 and '768 teaches forming a multilayer pipe by extrusion and cooling with water, and Francis teaches that when

forming a multilayer pipe by extrusion, it is conventionally known to desirably use a water bath to cool the extruded material.

*Allowable Subject Matter*

11. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The cited prior art does not teach or suggest, alone or in combination, at the formed insulation product can be further re-heated and placed into a mold for reshaping.

*Response to Arguments*

12. Applicant's arguments with respect to claims 1, 4-5, 8-10, 12 and 19 have been considered but are moot in view of the new ground(s) of rejection.

The Examiner notes the new art cited above to WO 87/04768 and Duthweiler (US 4676695) as to features provided in under sea pipelines.

13. The Examiner notes Hawley's Condensed Chemical Dictionary, page 1141 as to the definition of "thermoplastic".

*Conclusion*


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (703) 308-0078. The examiner can normally be reached on M-F(7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
KATHERINE A. BAREFORD  
PRIMARY EXAMINER  
GROUP 1100-1762